

Claims

[c1]

1. A system for extending a separation range of a keyboard, a video display and a mouse from a PC, the system comprising:
a PC having an expansion slot therein;
said PC having PC-mounted conventional keyboard, video display and mouse connectors thereon adapted and configured for coupling with conventional keyboard, video display and mouse connection cables;
said expansion slot being configured and adapted for provision of power and digital information when said expansion slot is occupied;
a keyboard, video display and mouse extender expansion card which is adapted and configured for combining and separating keyboard, video and mouse signals; said keyboard, video display and mouse extender expansion card disposed in said expansion slot, and receiving power therefrom;
said keyboard, video display and mouse extender expansion card having extender card mounted conventional keyboard, video display and mouse connectors thereon which are coupled to said PC-mounted conventional keyboard, video display and mouse connectors via connecting cables having conventional keyboard, video display and mouse connectors thereon;
said keyboard, video display and mouse extender expansion card further having an extender card mounted elongated cable jack for receiving an elongated cable therein which carries previously independent keyboard, display and mouse signals which have been combined; said elongated cable having a first end and a second end; and,
a remote module/ receiver/ transmitter coupled to said second end of said elongated cable, said remote module/ receiver/ transmitter adapted and configured to combine previously independent signals into a combined and to separate earlier combined signals for distribution to keyboard, video display and mouse devices.

[c2]

2. A system of claim 1 wherein said keyboard, video display and mouse extender expansion card has disposed on opposing sides thereof, a PCI buss

mating region and an ISA buss mating region.

- [c3] 3.A system of claim 2 wherein said elongated cable is a UTP cable.
- [c4] 4.A system of claim 3 wherein said UTP cable is a category 5 UTP cable.
- [c5] 5.A system of claim 4 wherein said UTP cable has a first end with a first male connector and a second end with a second male connector thereon.
- [c6] 6.A system of claim 5 wherein said first male connector and said second connector are identical.
- [c7] 7.A system of claim 6 wherein said first male connector and said second connector are RJ-45 connectors.
- [c8] 8.A system of claim 7 wherein each of said connecting cables has identical connectors on each end thereof.
- [c9] 9.A system of claim 8 wherein nothing other than power is provided through said expansion buss.
- [c10] 10.A computer system comprising:
a PC having exterior means for connecting video signals to a video display, exterior means for connecting mouse signals from a mouse, and exterior means for connecting keyboard signals from a keyboard;
means, internal to said PC, for interfacing said video signals, said signals a mouse, and said keyboard signals, with a composite signal;
means, internal to said PC, for providing power to said means for interfacing;
exterior cabling means for coupling said exterior means for connecting video signals with an exterior connector portion of said means, internal to said PC, for interfacing;
a remote means, external to said PC, for separating video signals from a said composite signal, combining said signals from a mouse and said keyboard signals into said composite signal; and,
means for transmitting said composite signal to said remote means.

[c11] 11.A system of claim 10:
wherein said exterior means for connecting is a conventional VGA output connector;
said PC further having internal provisions for connecting an RS-232 serial port;
said means, internal to said PC, for interfacing further adapted and for interfacing signals from a serial port with said composite signal.

[c12] 12.A system of claim 11 wherein said means, internal to said PC, for interfacing is an expansion card in an expansion slot.

[c13] 13.A system of claim 12 wherein said expansion card includes means for alternatively coupling with an ISA and a PCI expansion slot.

[c14] 14.A system of claim 13 wherein said means, internal to said PC, for power is a power connection in an expansion buss slot in said PC.

[c15] 15.A system of claim 14 wherein said exterior cabling means are a plurality conventional cables forming loop wires.

[c16] 16.A system of claim 15 wherein said means for transmitting is a single category 5 UTP cable.

[c17] 17.A method of extending a range characteristic between a PC and an associated keyboard, video display, mouse and serial ports, comprising the steps of:
providing a PC with industry standardized keyboard, video, mouse and serial connectors;
providing, in said PC, an I/O interface card which interfaces a single signal transmission path with a distinct keyboard, video, mouse and serial signal paths;
looping signals, via conventional cables exterior to the PC, between the connectors and an exterior portion of said I/O interface card;
looping serial signals to one of an internal connector and an external connector;

coupling, via a single elongated cable, said I/O interface card with a remote exterior composite signal to distinct signal interface module; and, providing distinct keyboard, video, mouse, and serial connections from said remote exterior composite signal to distinct signal interface module.

[c18] 18.A method of claim 17 further comprising the step of powering said I/O interface card through a power connection in an expansion slot in said PC.

[c19] 19.A method of claim 18 further comprising the step of inserting said PC a rack of industrial PCs, without including with said PC a local exterior coupled to said PC by a plurality of cables.

[c20] 20.A system for extending a separation range of a keyboard, a video display and a mouse from a PC, the system comprising:
a rack for receiving therein industrial PCs;
a PC, disposed in said rack, said PC having an expansion slot therein;
said PC being an industrial PC having sensors therein which monitor fan speeds and a temperature about a microprocessor in said PC;
said PC having PC-mounted conventional keyboard, video display, mouse serial connectors thereon adapted and configured for coupling with conventional keyboard, video display, mouse and serial connection cables;
said expansion slot being configured and adapted for provision of power and digital information when said expansion slot is occupied;
a half-length planar keyboard, video display, mouse and serial extender expansion card which is adapted and configured for combining and keyboard, video display, serial and mouse signals; said keyboard, video display, mouse and serial extender expansion card disposed in said slot, and receiving power therefrom;
said keyboard, video display, mouse and serial extender expansion card having extender card mounted conventional keyboard, video display, mouse and serial connectors thereon which are coupled to said PC-mounted conventional keyboard, video display, mouse and serial connectors via connecting cables having conventional keyboard, video display, mouse and

serial connectors thereon;
said keyboard, video display, mouse and serial extender expansion card
further having an extender card mounted elongated cable jack for receiving
elongated cable therein which carries previously independent keyboard,
display, mouse and serial signals which have been combined; said elongated
cable having a first end and a second end;
a remote module/receiver/transmitter coupled to said second end of said
elongated cable, said remote module/receiver/transmitter adapted and
configured to combine previously independent signals into a combined
and to separate earlier combined signals for distribution to keyboard, video
display, mouse and serial devices;
wherein said keyboard, video display, mouse and serial extender expansion
card has disposed on opposing sides thereof, a PCI buss mating region and a
ISA buss mating region;
wherein said elongated cable is a UTP cable;
wherein said UTP cable is a Category 5 UTP cable;
wherein said UTP cable has a first end with a first male connector and a
second end with a second male connector thereon;
wherein said first male connector and said second male connector are
identical;
wherein said first male connector and said second male connector are RJ-45
connectors;
wherein each of said connecting cables has identical connectors on each end
thereof; and,
wherein said keyboard, video display, mouse and serial extender expansion
card is provided only power through said expansion bus.

[c21]

21. A system of claim 1 wherein:
said keyboard, video display and mouse extension card is further adapted
configured for combining and separating serial signals; and
said extender card mounted elongated cable jack is further adapted and
configured for receiving an elongated cable therein which carries previously

independent keyboard, video display, mouse and serial signals which have been combined.

- [c22] 22.A system of claim 16 further including on said expansion card means for coupling to a serial port.
- [c23] 23.A system of claim 22 wherein said means for coupling to a serial port is internal to said PC.

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to understand what consumers want and what gaps exist in the current market.